

LMTCE-WIPT NAVAIR Environmental Program



Selecting The Right
Abrasive Blast Media



NAVAIR

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When it comes to paint and corrosion removal, abrasive blasting is often the preferred alternative to chemical processes. The question is - How can you determine what type of abrasive blast media to choose?

There are several factors to be considered when selecting blast media, such as the intended use, the substrate or component being cleaned, the material being removed, and the desired surface profile. The following information outlines common media types, the associated uses, and other applicable "tricks of the trade" that have been discovered through experiences with the Fleet, and should be a useful tool for use in media selection and application.

Abrasive Blast Media Selection

The following information will help to determine which media to use for some common abrasive blasting operations:

- To remove paint and corrosion in one step from support equipment and other steel components, aluminum oxide and steel grit are the preferred media.
- To remove paint and corrosion from aircraft components, plastic media followed by glass bead blasting is the preferred process, within the inspection limitations mentioned below.

Abrasive Blast Media Selection Types and Uses

The following information describes the types and uses of various abrasive blast media:

Plastic Media

- Used for paint removal from aircraft component surfaces.
- Authorized for use at intermediate level activities by NAVAIR 01-1A-509.
- Media authorized for use on aircraft components meets requirements of MIL-P-85891, Type V Acrylic media, size 20/30.
- Other media types and sizes under MIL-P-85891 are authorized for use on support equipment support equipment per NAVAIR 17-1-125.
- Media will provide about 10 cycles of effectiveness, prior to breakdown to dust, loss by attrition, etc.
- Media performs best when small additions of virgin material are continually added, resulting in a good mix of larger virgin material and smaller cycled material.
- Media can likely be leased and returned to the supplier for use in consumer products, eliminating it from the facility's hazardous waste stream. Requires local EPA approval.
- NOT effective at removing corrosion.
- NOT authorized for use prior to fluorescent penetrant inspection on aluminum and magnesium, as plastic media blasting has the potential to inhibit crack detection by peening these light metal alloys.

Aluminum Oxide

- Used for paint and corrosion removal from steel components.
- Authorized for use on support equipment per NAVAIR 17-1-125.
- Media meets requirements of MIL-G-21380 or equivalent industry specifications.
- Media will provide approximately 20 cycles of use prior to complete breakdown, loss from attrition, etc.
- NOT recommended for use on aluminum substrates, as surface damage may be severe due to the media's hardness, relative to the substrate.

Steel Grit

- Used for paint and corrosion removal from steel components.
- Authorized for use on support equipment per NAVAIR 17-1-125.
- Media will provide approximately 50 cycles of use prior to complete breakdown, loss from attrition, etc.
- NOT recommended for use in a high humidity environment, as moisture may cause corrosion of the media.

Glass Beads

- Used for corrosion removal from aircraft components.
- Authorized for using the methods and materials per NAVAIR 01-1A-509.
- Media meets the requirements of MIL-G-9954, Size 13 or equivalent industry specification (AMS 2431/6, Size AGB-6).
- NOT effective at removing paint.
- NOT to be used prior to fluorescent penetrant inspection of magnesium and aluminum, due to the peening effect of the glass beads, which potentially inhibits crack detection.

Garnet

- Used for removing paint and corrosion from metal surfaces.
- Media cannot be recycled, as it breaks down to dust in one cycle.
- As with any naturally occurring media, it is an inconsistent media source.
- Although it is a relatively cheap media to purchase, the disposal costs, increased dust in the blasting environment, and the reduced strip rate - when compared to aluminum oxide and steel grit - result in an overall higher cycle cost.

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